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More History Of Interest To Citrus Growers....

BY JEFFERSON THOMAS
FARM HOUR NEWSCASTER

Crop protection agencies maintained by the Federal and the State governments deal with diseases no less than pests, this commentator has been courteously reminded by Arthur C. Brown, the Florida Plant Board assistant commissioner and quarantine inspector. "Precisely so," as the late, great Doctor John Howard Ross would have said during his service as Florida Citrus Exchange president, which carried him well beyond the fourscore milestone in life.

Reciting the facts concerning the official endeavors for keeping out, preventing, eradicating or controlling the diseases that pester plants brings on more talk, however, part of which may be new even to young Mister Brown, who is about as old in Florida as the organization that he has so capably assisted nearly all the time since it was formed during nineteen hundred and fifteen. "Buck" does not even take time out for fishing expeditions, but confines them to holidays.

Diligently spying out the land for more than three years previously and finding Florida a potential source of milk and honey, yours truly decided that he would better move down and save travelling expense, so Jacksonville was invaded during the nineteen thirteen Fall months and The Thomas Advertising Service established on his last remaining shoestring. In a promotion booklet printed soon thereafter and entitled "The Thomas Idea," it was indicated that the effort would be to build the agency around the rapidly developing citrus industry, which had attracted and intrigued from the early part of nineteen ten, as previously related through chronicles covering Burton, Commander, Ross, Skelly, Temple, and others.

Came the summer of nineteen fourteen, with the aforesaid shoestring stretched almost to the breaking point, and Europe became a seething Hades. June twenty-eighth the Austrian Archduke Francis and his wife were assassinated; a month later Austria declared war on Serbia; August second Germany invaded France and Russian troops marched across the German border; August sixteenth, a British Expeditionary Force crossed the English channel into France; on the twentieth Germany occupied Belgium; the twenty-third brought Japan's declaration against Germany which was reciprocated aften two days and by September sixth the Battle of the Marne was proceeding. United States Marines landed at Vera Cruz, Mexico, April twenty-first preceding.

Meanwhile, Florida growers had been hearing about a disease foreign to the groves of the state, discovered first at Monticello, Jefferson county, by Doctor E. M. Berger while inspecting nursery stock on September thirtieth, nineteen twelve, and again found during June, nineteen thirteen, in a Dade county tree-propagating establishment. Grove infections developed the next Spring and in May the Florida Growers and Shippers League, created for handling transportation problems, contributed the funds to prosecute a preliminary investigation, Secretary-Manager Lloyd S. Tenney personally assuming charge, with Frank Stirling carrying on the field work under direction from the State inspector of nursery stock. Hope that affected trees might be cured was abandoned by July and the eradication procedure adoptedd which burned them, branches, trunks, and roots. Resistance regarding the practices did not fail to show itself but the task was completely accomplished without legal measures becoming necessary respecting many infected plantings.

Broward, Brevard, Escambia, Lee. Pasco, Palm Beach, Pinellas and Walton counties reported citrus canker before Christmas arrived and the next year the disease was located Baker, Bay, DeSoto, Duval, Hillsborough, Marion, Santa Rosa and Seminole. Investigations revealed that it was probably introduced into the United States on nursery stock from Japan, reaching Texas, Mississippi, Louisiana and Florida at approximately the same time and Alabama subsequently. Oranges and grapefruit had not assumed great proportions as a commercial indus-

try in any of the other Gulf Coast states than Florida up to that time, it should be remembered. Funds made available February first nineteen fifteen by the United States Congress for an Agriculture Department plant industry bureau inquiry into the possibilities for eradication, totallng thirty-five thousand dollars, were more than two-thirds expended in this state.

April thirtieth Governor Park M. Trammell approved the Florida Plant Act which the legislature had passed shortly after its biennial convening, setting up the State Plant Board, giving it a continuing appropriation of thirty-five thousand dollars annually and providing one hundred twenty-five thousand dollars for citrus canker eradication. Monies supplied by the federal government thereafter considerably exceeded a million dollars for expenditure in Florida alone and the Florida treasury contributed over one million one hundred thousand dollars additional for the period which intervened before the disease was finally conquered in the state during nineteen and thirty-two. infections long before had been reduced to a few scattered and stubborn cases. Recorded through the success attending the canker campaign was the first known instance in which a major plant disease was eliminated from a sizeable territory, just as the Mediterranean fruit fly effort between nineteen twenty-nine and thirty-one constituted the initial instance of large scale plant pest eradication.

Activities that assured the appropriations which carried the canker effort to a glorious conclusion, especially the ones made by Congress, contained many colorful features. Meeting in Gainesville, October sixth, nineteen fifteen, a growers' conference appointed a committee consisting of D. C. Gillett, chairman, L. D. Jones, G. S. McClure, J. H. Ross, and L. B. Skinner to go get the money as it might be needed. Previously the transportation companies, the marketing groups, the nursery owners, the grove operators, the Growers' and Shippers' league, the Governor's contingent fund and even an advertising agency had joined in raising between seventy-five and one hundred thousand dollars. Gillett proceeded promptly to vitalize the committee he headed, and Ohio Governor James M. Cox for the second time loaned Florida his efficient right-hand man, George F. Burba, who spent sometime at Tampa helping plan the program. Need was then felt for a man who knew not only Pennsylvania Avenue but the National Capital back alleys and the narrator obtained from the Washington Evening Star a leave-of-absence which brought into the picture W. P. Kennedy, ace reporter having contacts of the most valuable type. Champ Clark was about to be reelected House speaker for the third term of his four consecutive two-year periods and Kennedy advised that approval from him must be procured in advance or the appropriation would fail.

Lecturing at Ocala not long before the session assembled, Clark was kidnapped when he left the Opera House by Gillett, Doctor Ross and this culprit. Taken to quarters reserved for the purpose in a nearby hotel. the great Missourian listened closely but coldly as the story was told him and thereafter kept his face shut until invited into an adjoining room for refreshments and asked about his home-town Starks, the nurseryman of Delicious apple fame who furnished the "Show Me" State a governor quite recently. Kentucky-born, the elder Champ Clark had an excellent and well-trained taste for good Bourbon and after a few rounds he relaxed and gave the committee the desired assurances. "Look out for the damyankee Republicans on the appropriation committee," he warned, especially mentioning James R. Mann, the ranking minority member.

Hearings started before the group when Congress had convened, Gillette formally outlining the Florida case and Kennedy doing the leg work. Mann asked some rather peculiar questions and Collins undertook to paint for him the background behind the state. "Don't waste your time, young fellow!" Mann snorted, "I've followed a mule through the sands of Florida too many days not to know what makes her click." Then it came out that as a boy the Illinois Congressman had worked for his uncle on the old Mann plantation between Gainesville and Palatka.

Hewers of wood and drawers of water gave their best in both the citrus canker and the Mediterranean fruit fly campaigns, but history will testify that their successful outcome was primarily due to the determination, the foresight and the intelligence contributed by the directing head, Doctor Wilmon Newell. Elected plant commissioner by the State Plant Board during July nineteen fifteen, he took up his duties soon thereafter and for some reason or another the citrus canker committee had its initial foregathering with him on the old Marion county fairgrounds at Ocala. Chairman Gillett and members Jones and Ross kept the appointment, Old Man Thomas trailing along with a proxy from member Skinner. Gillett had breadth of body no less than mind and weighed well on to three hundred pounds. Jones towered aloft considerably about eighteen hands and displayed corresponding heft. Doctor Ross, himself a mental rather than a physical giant, looked toward Doctor Newell as he loomed in the distance, glanced at Gillett and Jones, and from the side of his mouth whispered "Jeffy, you ain't been nowhere nor seen anything yit."

Next to Doctor Newell and the scientific background, the practical experience and the official supervision he supplied, rank among the forces which fought the citrus canker in Florida should be assigned to D. Collins Gillett, whose untiring efforts kept the sinews of war coming through, and William J. Krome, who was equally persistent regarding the endeavors that formed and held the Dade county battle lines. Gillett had developed extraordinary business acumen at an extremely early age and Krome furnished the engineering genius that enabled Henry M. Flagler to build the Overseas Railway but they met on common ground in considering the fruit industry of primary importance for every Florida interest.

After reaching Washington City for the work with Congress on appropriations, Gillett telegraphed Krome for information and records covering the earlier stages of the campaign. Krome replied promptly, giving the data available but explaining that neither time nor money had permitted very careful book work. "We have felt," his wire stated, "that it would be better to get rid of citrus canker and not have an accurate report respecting the means by which the task was accomplished than to prepare an elaborate history describing how we failed in eradicating the disease."

Patrolling the battlements of Heaven today, Gillett and Krome may speak to each other in passing and indulge earth-bound grins concerning how this surviving comrade herein has substituted reminiscences for records.

Avocado diseases in Florida are discussed in Circular No. 582, recently issued by the United States Department of Agriculture. Authors are H. E. Stevens and R. B. Piper of the Orlando offices of the Bureau of Plant Industry.

The Well Drained Soils of Central Florida

BY J. R. HENDERSON
Associate Chemist, Florida Agricultural Experiment Station

In the well drained portions of Central Florida, where there is a striking relationship between certain soil conditions and the general character of the native vegetation, farmers describe their lands in such terms as high pine land and high hammock land. Although such terms convey a general picture of the soil conditions in an area, they do not tell the whole story. Soil scientists have identified several kinds of soil under each of the various general types of vegetation. Nevertheless, the terms in everyday use by farmers are useful for grouping soils.

The well drained soils of Central Florida may be grouped on the basis of their native vegetation into three general land types. These are: high hammock land, high pine land, and scrub land.

The high hammock land is rather widely distributed in central Florida, large areas occurring in Alachua, Marion, Hernando and Pasco counties. Small areas are found in most of the counties adjacent to those named. This type of land occupies gently sloping to rolling areas and supports a native growth of hardwoods and loblolly pine with some longleaf pine in places.

The soils in these hammocks are dominately of the Gainesville, Arredonda and Fellowship series, which are easily distinguished by their colors. The Gainesville soils are reddish; the Arredonda soils are yellowish; and the Fellowship soils are grayish. All of the soils have loamy surfaces and sandy clay or clay subsoils, which usually are within five feet of the surface and contain phosphatic pebbles.

These are inherently the most fertile well drained soils of the Florida peninsula. At one time they were widely used for the production of citrus, vegetables, and Sea Island cotton. The freezes of 1885 and 1895, coupled with the opening of areas farther southward, caused a rapid decline in the production of citrus and vegetables. At present, citrus is confined to the more protected areas of these soils. The invasion of the boll weevil eliminated Sea Island cotton for a number of years, but considerable acreage of this crop has been planted in recent years. At present, corn, peanuts, velvet beans, oats, and tobacco are the most important crops grown on the Arredonda and Gainesville soils while vegetables are still the most important crop grown on the Fellowship soils. During recent years many farmers have become interested in cattle production and are turning their attention to the development of permanent pastures. Apparently, there are at least half a dozen pasture plants suitable for use of these soils.

In the management of these soils special attention should be given to maintenance of the organic matter supply, through the addition of cover crops such as Crotalaria; the application of zinc for prevention of white bud of corn and bronzing of tung; and to the prevention of erosion, especially on steeply sloping areas where the clay subsoils are near the surface.

High pine land occurs in nearly every county in the northern two-thirds of the peninsula. The largest area extends southward from the Georgia line in Madison and Hamilton counties to Lake Placid in Highlands county. This type of land occurs on almost level to gently sloping relief and supports a native growth of longleaf pine and wire grass with some oaks in places: In many places pure stands of blackjack have become established after logging operations.

Nine different kinds of soil have been recognized in the high pine land. For discussion, we have divided these into four groups.

The first group includes the light colored deep sandy soils of the Norfolk, Eustis, and Blanton series. In color, the Norfolk soils are yellowish, the Eustis soils are reddish and the Blanton soils are grayish. Except for the Eustis soils which are confined to small areas mainly in Lake and Polk counties these soils are widely distributed throughout the well drained portions of the peninsula. These soils are used for the production of citrus, watermelons, bright tobacco, Sea Island cotton, corn and peanuts. They are inherently infertile, but are very responsive to fertilization. With the excepton of corn and peanuts, which are usually grown without fertilization, all crops grown on these soils receive heavy applications of fertilizer. In the case of citrus, special attention is given to minor element fertilization. These soils should receive heavy additions of organic matter as a means of reducing losses of certain fertilizer materials through the leaching action of water.

The second group of soils in the high pine land includes the dark colored deep sandy soils of the Orlando and Fort Meade series. The main areas of the Fort Meade soils are located in the pebble phosphate region of Hillsboro and Polk counties. The Orlando soils are found mainly in the vicinity of Orlando, in Orange county and LaCrosse in Alachua county. These soils have deep dark colored surfaces, indicating a good supply of organic matter. Where these soils are protected against frost damage they are highly prized for citrus. In the LaCrosse section, the Orlando soils are used extensively for the production of truck crops. The fertilizer requirements of these soils are relatively low when compared to those of the other soils of the high pine land.

The third soil group in the high pine land includes the Hernando and Newberry soils, which have a substratum of limestone usually within 6 or 7 feet of the surface. The Hernando soils are yellowish, while the Newberry soils are grayish. The largest areas of these soils are found in the western part of Alachua county and in adjoining counties. Large acreages of high quality bright tobacco, peanuts, and watermelons are produced on these soils.

The fourth group of high pine land soils includes the Archer and Rex soils which have clay subsoils at depths usually between two and three feet below the surface. The subsoil of the Archer soils is a red, gray, and yellow heavy clay while that of the Rex soils is a yellow friable fine sandy clay. The surface soils of both are gray and rather sandy. The Archer soils occur in close association with the Hernando and Newberry soils in Alachua and Suwannee counties and are used like those soils. In areas with considerable slope, erosion should be guarded

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GREEN FRUIT SHIPMENTS—AGAIN

Florida citrus men returning from recent trips to Northern markets report that dealers and consumers are complaining that early shipments of Florida grapefruit and oranges are unsatisfactory, being dry, ricy and without the true citrus flavor. This in face of the recently enacted stringent maturity laws, the efforts of the citrus inspectors and the backing of the Florida Citrus Commission.

Taking cognizance of the complaints, the Citrus Commission promptly raised the juice content standard by 10 per cent, the limit allowed by law. This action was taken at the request of numerous growers and shippers, and the higher standard will be in effect through Nov. 15. Raising the standard, it is hoped by members of the Commission, will have the effect of holding back shipments of unfit fruit.

Every year since the raising of citrus fruits has become a major industry in Florida this same situation has prevailed. Each year a few growers, anxious to obtain the "high dollar" for early shipments, have rushed unripe fruit to the Northern markets, although knowing that such shipments would react upon the price received by themselves and other growers when fully ripe fruit began moving to the markets.

Every year many shippers and hundreds of growers have protested against the practice; every year since its inception now nearly twenty-two years ago, this publication has joined the protest, and has had the support of most publications of the state. Numerous maturity laws have been enacted by Florida legislatures, strenuous efforts have been made by the inspectors of the State Agriculture department, the Citrus Commission since its establishment has joined in the effort to eliminate the shipment of any but high grade fruit. Yet, in spite of these efforts, each year witnesses a repetition of the practice.

Many growers are inclined to blame the shippers; others place the blame on the coloring rooms. Yet the real remedy lies in the hands of the growers themselves. If the growers would refuse to sell unripe fruit, the shippers could not ship unripe fruit; if the growers refused to sell unripe fruit, the coloring rooms could not color unripe fruit—and there is nothing wrong with coloring if applied only to ripe fruit. So, just so long as the growers continue to sell their fruit regardless of its condition, just so long will a certain portion of the early crop continue to reach the consumer markets before it is fit for consumption — apparently regardless of maturity laws, the efforts of inspectors, the backing of the Citrus Commission and the protests of growers and the press.

In the final analysis, it is up to the growers and grower organizations to see that no unripe fruit is permitted to reach consumer markets.

THE CROSS-STATE CANAL—AGAIN

Efforts to revive the Florida cross-state canal are again under way. Provision for resumption of work on this project is contained in a blanket bill now before congress and has the active support of many congressmen, including some of the Florida delegation.

A great majority of Florida citrus growers are opposed to the construction of the canal, believing that its construction would seriously effect the underground water supply upon which they depend for irrigation of their groves.

Not only do they fear that the water table would be materially lowered, but that the water supply would be contaminated by salt water through seepage from the canal.

Opponents of the canal are now organizing to combat the revival of the project and citrus growers are being urged to join in the protest by individual action and through direct activity on the part of grower organizations.

HAVE FAITH IN CITRUS

Sale of the Alcoma grove near Lake Wales to a syndicate of Boston capitalists for a stated price of $850,000 is practical evidence that Northern investors have faith in the stability of the citrus industry in Florida.

The Alcoma grove, containing a total of 2,500 acres, is believed to be the largest single grove property in one body within the limits of the state. The grove comprises 154,000 trees and of late years has produced more than 400,000 boxes of fruit annually.

This vast citrus property was developed by the late August Hecksher, and during the later years of his life was a pet project of the noted financier and philanthropist. It is estimated that the present crop will aggregate 450,000 boxes, and the buyers have set a goal of 1,000,000 boxes annually as the mark for which they will aspire.

There is no mystery about the recent slump in the price of both grapefruit and oranges on the Northern markets. The slump came concurrently with the report that early shipments of fruit were of unsatisfactory quality. The unfortunate thing is that it is easy to knock the prices down with off-grade fruit, but hard to build them up when high quality fruit begins to move.

Reading an article written thirty-one years ago on conditions in the citrus industry, reveals that we have progressed less rapidly than many of us have been inclined to believe. We are still facing many of the same problems, and apparently are still far from the proper solution.

Some Of The Factors That Determine The Availability Of Fertilizers

Paper Prepared By
CORNELIUS CHRISTIANCY
To Be Read Before The
Porto Rico Horticultural Society
Tuesday, July 26th, 1910

The following paper was prepared for presentation before the meeting of the Porto Rico Horticultural Society thirty-one years ago, yet it contains so much truth of value to Citrus Growers of Florida today, that we take pleasure in presenting it to the readers of this magazine.—The Editor.

When requested by our President to furnish this paper, he stipulated that it should "be more or less technical in character and deal more with the individual elements that go to make up a fertilizer, rather than with the completed article." In view of the fact that I have never prepared a paper on any subject, much less than on the one I am about to discuss, I want you to feel that what I have to say now is said with a view of exciting a deeper interest in the subject, and that others better equipped than I am both by training and experience will advance our knowledge along these lines.

Baron Liebig, in speaking of the tillage of the soil, said: "There is no profession in which the application of **correct principles** is productive of more beneficial effects, or is of greater and more decided influence."

We read a great deal of the "New Science of Orange Growing," and each new convert is looking for the "rule of thumb," and he enters the field of citrus culture with a firm belief that he can master the details in a few short months and be independent of trouble.

As a matter of fact there is no such science.

The growing of citrus fruits has been a pre-occupation on the part of many well-to-do people for several decades, and it has become an occupation in recent years for many who have found it both a business and an art, requiring a knowledge of many sciences chief of which are chemistry, botany and climatology.

Considered as a business it requires good judgment and rather skillful management to make the crop pay the expense of production. There can be no **rule of the thumb** laid down for the beginner other than to say to him that he must acquire the **correct principles,** and every grower must modify them and apply them as best he can, for he will find his soil conditions as a rule a local problem, and if he is a keen observer, and has a bent of mind that will enable him to deduce a reason for such conditions, he will in time become a master of his own individual problem.

I must confess that I read the pamphlet which Mr. May prepared on Sugar Cane Growing in Porto Rico with a great deal of interest, just as I did the experiments of the Rhode Island Station on the Liming of Soils. I was searching for the **underlying principles** in each of them, and that is the real and important work of the Experiment Station today, to teach us the underlying reasons and not to lay down specific rules for each perplexity.

When a fellow grower tells you that he did this or that then ask him WHY? Go about eternally exacting the reason why—don't accept so called truths as such and be content with that, but observe and experiment and if possible determine the reason why.

Fertilizer may be anything which makes fertile or tends to make the soil productive. The Chinese and Japanese can teach us much about maintaining the fertility of the soil. Their soils do not wear out and there is no reason why ours should either — it is simply a question of knowing how. There is an old saying "that a chain is not stronger than its weakest link" and that is one of the vital secrets of maintaining fertility of the soil.

The fertility of the soil depends on the presence of **all** the substances required by the plants, and the measure of its fertility depends on that particular ingredient present in the least proportion.

Now comes our Beginner and seizes upon this as a rule of thumb, and he rushes a sample of soil off to the chemist to be analyzed. He has another happy thought as well, and he sends to another chemist perhaps a sample of the wood, the leaves and the branches of the trees to determine in just what proportion the principal elements of plant food are present, and then he stumbles on an article written by some Government expert showing just how much of the various elements of plant food are removed by a crop of fruit.

Our Beginner is no longer a tyro in the game because he has solved the New Science of Orange Growing — he thinks he has, but his troubles have hardly sprouted.

When a man has been growing oranges for thirty years and is recognized as an authority by his neighbors, and that man tells me that a grove cannot be made to produce more than 150 boxes of fruit to the acre, and that same man tells me that he does not care what the source of his plant food is, I feel sorry for him.

I knew such a man, and it was with some pleasure that I showed him a grove one day that was producing from 700 to 1200 boxes per acre and at much less expense than his was producing 150 boxes.

Are we as growers going to waste the next thirty years in the same way he did, or are we going to try and master the first principles of agriculture? This society if it is to exist as a healthy institution must have a cornerstone that will live and be a guide to us, and that must be the finest technical library on Citrus Growing and subjects kindred and allied to it.

We have here one of the finest climates in the world, so we think, for the growing of citrus fruits, but have we?

Don't let us accept that as a truth —let us prove it.

We are not all constituted alike so let those among us who are blessed with the analytical mind form a Citrus Experiment Club, and carry on the work for the good of all.

The soil specialist would divide the diseases of the citrus tree into two main classes — those caused by the depredations of birds, insects and parasites, and those arising from derangements of the soil. He feels the pulse of the tree as it were to decide from what source he shall draw his plant food. It is just as important to him to consider this as it is to consider the quantity of the three principal elements. Accordingly as the soil tests acid or alkaline he draws the plant food from opposite sources in order to get a reaction. If the soil is acid by test he may draw his ammonia from nitrate of soda, the phosphoric acid from finely ground steamed bone, and the potash from double manure salts; and if the soil is alkaline he can supply his needs from sulphate of ammonia, acid phosphate and high grade sulphate of potash.

Our Beginner, who has been experimenting with complete mixtures, reads the above and he at once thinks that he has found "the rule of thumb," and he proceeds to purchase his raw materials and mix his own fertilizer. He has really hardly begun to realize "where he is at," but he goes at it with all the enthusiasm and energy of youth. He continues to study his lesson and finds that his soil is deficient in humus and that this is necessary to absorb both moisture and plant food, preventing the latter from leaching; and he reads further that humus breaks up and renders available as plant food a portion of that which his chemical analysis has spoken of as "insoluble residium."

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SOME OF THE FACTORS THAT DETERMINE THE AVAILABILITY OF FERTILIZERS

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Along about this time he awakens to the fact that his soil is not nearly as poor as he thought it was, that there is a way to make it give up its plant food, that a soil may contain much plant food and yet lack fertility — in fact, that it may contain its full quota of all the elements necessary to support the life of the tree and yet the tree may be unable to assimilate its food.

It is then that he commences to realize that physiology is an essential thing to learn among the rudiments of other sciences allied to this new science of orange growing.

He turns to the fly-leaf of his Experiment Station pamphlet and finds that the station has a Physiologist, Entomologist, Plant Pathologist, Horticulturist and a Chemist, each of whom have spent years of specializing in their own particular branch, and that he, the new beginner in the science of orange growing, must needs learn from each of these specialists something and that all that they can possibly teach him will be the underlying principles, and that he must study and learn to apply his knowledge.

The man who has entered this new field with the sole view of making money will drop out in the early stages of the game or else engage someone to take up the task for him. There is nothing short of a "harvest of barren regrets" in store for the man with a purely commercial instinct. I feel sorry for him, but I do not feel sorry for those men, who while they find that growing oranges is nearly as difficult a task as the Spaniards found the search of gold, still cling to it because they have found something fascinating and satisfying about it.

A soil to be fertile must be well balanced, and the man who persistently cultivates his soil, and as persistently applies commercial fertilizers, without due regard to their effect upon the soil, may destroy the supply of humus which he had in the commencement and thus bring about such totally different conditions that the very mixture which gave him such splendid results in the first place fails to produce a crop of anything except diseases and insect pests.

Following up our study we find that common table salt is composed of two elements, chlorine and sodium, either one of which if taken alone would be a poison, but that in combination they afford a very desirable article of food. On the other hand we find in our study of plant life that certain elements are plant food if taken up separately by the plant, but that in combination they become a deadly poison. The plant Physiologist comes along and tells us that the tree has certain selective powers and can take up either the acid or the base and leave behind that which it does not require or want at the moment. Long before new we have laid that chemical analysis away in a pigeon hole of our desk with other cherished illusions of the past, but we draw it out again, and we see things that were not clear to us in the beginning.

For instance we note that our soil contains much Iron and Alumina as well as lime, but that it is sadly deficient in the prime elements of Nitrogen, phosphoric acid and potash.

We sit and think a moment and we wonder how we ever grew trees to be six years old without having to apply any commercial fertilizer, and then we read up on alumina and the double silicates.

We find that the fertility of clay soils is largely dependent upon the presence of a peculiar form of silicate of alumina which exists in combination with lime, soda, potash and ammonia, known as the double silicates, and that the acid excretions of the root of the citrus tree renders these silicates available to it as plant food, the tree taking that which it requires.

Just as we are commencing to see clear sailing ahead we find that we have tree troubles. The bark splits in a great many places and we assume that the tree is taking up too much potash, but how can it we argue, because does not the physiologist tell us that the tree has the power to select its food?

The tree commences to gum, and we are told to apply carbolineum, which we do and it cauterizes and prevents the spread of the sore, but we know that any local application will not correct the derangement of the soil which caused it, and that when the soil conditions are favorable again for the progress of the disease that it will break out in some fresh spot.

When we apply the elements of plant food to our soil in which it is lacking, and we fail to get the desired results, we can only assume that the tree is unable to take up or assimilate the food, and if it takes up too much potash then it does not do so because it wants potash, but because it requires a similar base, for instance, lime, and if a chemical analysis of our soil shows us a super-abundance of Lime present, and in a form which should be available to the tree, and the tree is not getting it then there is something else present in the soil that prevents the proper assimilation. The production of a **maximum** crop is not dependent upon the **amount of plant food** you supply the tree nearly so much as it is upon favorable influences in the soil.

Thus the **profit** from the use of fertilizers is dependent to a very large extent upon the perfection of soil conditions which are entirely within the power of the grower to control.

If you are going to make any rational use of fertilizer you must not only study the needs of your tree, but your soil also.

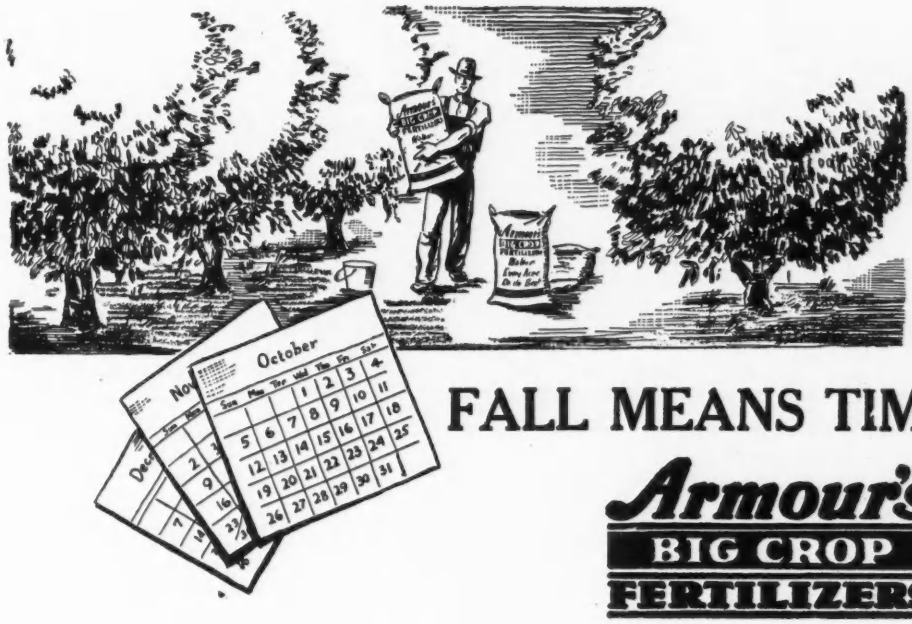
When we have learned that nitrogen does more to induce growth; that when drawn from certain sources it will set and hold the fruit, that when applied at the proper time it will induce a heavier bloom, provided the soil conditions are favorable; that phosphoric acid is more than a plant food for the tree, but is also a catalyzer, enabling the tree to take up plant food that would otherwise remain inert in the soil, that it is likewise a food for the nitrifying bacteria, and it also neutralizes the excessively alkaline soils, and where there is an excess of carbonic acid present it will react with that, then we begin to appreciate the value of drawing our plant food from proper sources.

When we have learned that an excess of humus, or of lime is equally as harmful as a deficiency of either; that too much tillage on some soils will not be sufficient on others; that non-tillage is beneficial to some soils; that some crops of legumes are more beneficial on alkaline than on acid soils, and that green manuring is of advantage to an alkaline soil and a poison to an acid soil, then we will commence to realize how much lies in our power to create a well balanced soil, and that only constant care and study will keep it so. All of these things come easy to the man who has taken up the "New Science of Orange Growing" because he loves the work for the work's sake, and his trees become children to him, and as they have required a great deal of him to bring them to a state of perfection so will he require a great deal of them, and then and not till then will the Grower of Citrus Fruits reap his reward.

You will always find a man who by the mere application of plant food in sufficient quantity gets a crop for that one year, but if he fails the second, you can readily understand why he failed.

To take a grove that is producing a crop of 100 boxes per acre and increase that crop year by year by leaps and bounds is more than mere chance, and to improve the quality of the fruit as each year passes requires study and care as much as the profession of medicine does, and the passing years teach us even after we have acquired some degree of success that we are yet in the primer class.

IN FLORIDA GROVES



FALL MEANS TIME FOR

Armour's
BIG CROP
FERTILIZERS

For nearly half a century, thousands of successful Florida growers have depended on Armour's to help produce bountiful, finer quality yields that brought higher prices. They found Armour results were consistent — in grove and vegetable field — season after season. So they stuck to Armour's, and passed the habit on to their sons.

These same growers know the **fall** application of BIG CROP is doubly important to citrus trees during the winter resting period. Roots gather new energy from Armour's abundant supply of major and minor plant foods. A foundation is laid for fruit of finer texture, improved appearance, more delicious flavor.

Every fall, you'll find many of your neighbors strengthening their trees with Armour's. This time, Join the BIG CROP growers yourself! Let Armour's help you prepare for a finer yield, and a larger profit from your grove next season.

Just drop us a card, and an Armour grove man will inspect your trees without obligation. He can suggest an analysis to suit **your** citrus, and Make Your Work Count for More

ARMOUR FERTILIZER WORKS

Jacksonville, Florida

Production Of Citrus Fruits Shows Vast Gain

Although the trend toward streamlining the human figure has resulted in consumption of vast quantities of citrus fruits in recent years, production continues to leap ahead. This is the gist of an article by Creighton N. Guellow, associate agricultural statistician of the department of agriculture. The article appears in a recent issue of "Marketing Activities," issued by the agricultural marketing service.

Citrus has been more responsible than any other fruit for the exceptional increase in production shown in recent years, Mr. Guellow emphasizes. Total supplies of 15 major fruits, excluding cherries, averaged only 176 pounds per person for the five seasons, 1919 through 1923. During the more recent period, 1934 through 1938, supplies of these fruits averaged 206 pounds. Excluding apples in noncommercial areas, per capita production totaled 218 pounds for the 1939 season, and 208 pounds for the 1940 season.

Mr. Guellow believes that increasing and widely disseminated information about vitamins is responsible for the phenomenal expansion of citrus fruit production. During the five-year period following the world war, the production of citrus fruits totaled only about 29 pounds per person. Citrus fruits include oranges, grapefruit and lemons, for the purpose of this study. During the more recent period, however, ending with the 1938 season, citrus production totaled more than 60 pounds per person.

Per capita supply of oranges almost doubled, while the supply of grapefruit available for each person more than tripled, during this latter period.

The upward trend in the production of citrus fruits still continues, Mr. Guellow's article states. Although much of the crop for marketing during the current fruit-marketing season, which ends late next spring, has not yet been harvested, present prospects indicate that for each man, woman and child in the United States there will be approximately 47 pounds of oranges, 28 pounds of grapefruit and eight pounds of lemons.

Some fruits are declining in public favor, Mr. Guellow writes. Apple production, for example, declined from an average of 72 pounds per person in the early 1920's to 57 pounds per person in the middle 1930's'. This is attributed to some extent to increasing competition from other fruits. Peach supplies declined five percent and cranberry production dropped from one-half pound per person to four-tenths of a pound.

Mr. Guellow's studies also reveal that Americans are using more and more canned fruits. Canned grapegruit and grapefruit juice were practically unknown in the early 1920's, but annual supplies of these products now average about two pounds per person. Other canned products increasing in popularity are pineapples, peaches, pears, plums, prunes, fruits for salad, and canned and preserved cherries.

The bearing acreage of ten major tree and vine fruits, excluding citrus, has not increased in proportion to gains in production, leading to the conclusion that more and more production by using improved cultural practices is being obtained from the same number of acres.

This explanation does not apply to citrus, however, Mr. Guellow emphasizes. Citrus acreage has more than tripled since 1919. During most of the past 20 years, the average yield per acre has declined with a large proportion of the bearing acreage consisting of young trees. Citrus groves are yielding heavier now, however, as trees grow older.

Large quantities of fresh apples, pears and citrus fruits, as well as dried apples, pears, apricots, prunes and raisins, were exported to Europe prior to the war. European markets

(Continued on page 18)

THE RIGHT PLANT FOODS IN THE RIGHT AMOUNTS AT THE RIGHT TIME

Gives Unfailing Land Fertility!

For everything that grows in Florida....

GULF Brands of FERTILIZER

Friendly Fertilizers Layed to Your Soil

THE GULF FERTILIZER COMPANY
Tampa and Port Everglades

FLORIDA CANNED CITRUS . . . . . POPULAR IN WEST

Reporting to the Florida citrus commission on his recent sales promotion trip to the Pacific Coast, Chas. H. Boyles, of the commission's sales promotion department, stated that Florida citrus products enjoys high consumer demand and an enviable reputation for dependable quality in the far West. Mr. Boyles spent four months covering retail and wholesale trade in Northern California, Oregon, Washington, Colorado, Utah, and Idaho, and found the distribution of Florida canned citrus products to be highly satisfactory. Distribution of individual items, according to Boyles, is, grapefruit sections 100%, grapefruit juice 98%, blended juice 89%, an orange juice, 67%.

Boyles stated that the trade in these areas feels that the advertising done by the citrus commission is responsible for the high place Florida canned citrus products are holding, and it is the general belief that more of this work would accomplish further good results by increasing consumer information on the benefits of canned citrus fruits and juices.

Florida canned citrus products are constantly advertised by the trade in newspapers and handbills, and through the distribution of the commission's display material, point of sale identification, and tie-ins were created. The demand for Florida canned orange juice is steadily increasing with more and more promotional work being done on this product by the trade. Until recently, the canned orange juice market in this territory was left to California, with most of the promotional activities concentrated on grapefruit sections and juice, and blended juice. However, this condition is changing and Florida canned orange juice is now being received with all shipments of other citrus products.

Brokers representing Florida citrus accounts are very active and are very much interested in the work being done by the citrus commission. The demand for Florida canned citrus has been so great this season that brokers who increased their purchases and rented additional storage space have not had to use it, since shipments are taken up by the tr as soon as they are received. Retailer acceptance is very good and the trade is constantly buying to meet the demand.

Calling on all outlets directly or indirectly interested in canned citrus products, chiefly wholesalers, brokers, corporate chain headquarters, super markets and retailers, Boyles found that the outlook for Florida citrus products in these markets is very bright and should show a greatly increased movement next season. Population of these markets has swelled tremendously, in some cases doubled or tripled, due to the en largement of the national defense industries. Boyles made 1,250 personal contacts, over 50% of these on retail stores. As a result of thes calls, 718,000 pieces of display material were ordered and 138 special promotions arranged. Through cc tacts with executives of large cha and cooperatives, a total of 9,565 stores are now participating in spe cial Florida canned citrus drives.

A special sales promotion f folio, explaining the work of the Florida citrus laws, together with a description of the extensive advertising and promotional campaign, was exhibited to all wholesale and retail factors visited.

Quadruple Value With...

BROGDEX

REDUCES DECAY
RETARDS SHRINKAGE

The Brogdex Process not only provides a

Better Wilt Control

but it also makes possible a

Better Polish

one that has longer life and

Improves Your Grade

gives you more number ones and more combination grade

Decay Control

reduces refrigeration costs

* *

Some other processes may give you one and some the other, but . . .

BROGDEX

GIVES YOU ALL FOUR

B. C. SKINNER, Distributor

THE BROGDEX SYSTEM

Coloring Room Process Color Added Process

DUNEDIN, FLORIDA

ADVERTISEMENT — LYONS FERTILIZER COMPANY

The LYONIZER

Department

COMPILED BY THE LYONS FERTILIZER CO.

Reports of Lyons Field Men . . .

SOUTHWEST FLORIDA
F. W. (Felton) Scott

Groves in this territory have suffered during the month as a result of dry weather, but rain during the middle of the month gave much needed relief. While some grapefruit has been moving from this section, the maturity is very slow and consequently we haven't moved the tonnage that is generally moved at this time of the year. A few oranges have moved from Lee county. Growers are just getting under way with their fall fertilization. Vegetable growers along the west coast from Ruskin south are well under way with their crops. The weather has been extremely hot howver, and growers have encountered much difficulty up to the present time.

WEST CENTRAL FLORIDA
E. A. (Mac) Cartney

This section is a constant buzz of activity at this time of the year and we are glad to report that everything is looking fine at the present time. During October we nad some dry weather and many growers started their irrigation plants to get some water on the grove. Many groves in the territory are being plowed while others are being thoroughly disked. The fall fertilizer application is being applied. Trees as a whole are in very fine condition. The strawberry acreage in this territory will be short by about 25 percent, with the general vegetable crop acreage just normal. Mole crickets have been giving growers considerable trouble. However, poison bait has been supplied to all growers and the fight is on to get this insect under control.

NORTH CENTRAL FLORIDA
V. E. Bourland

We have heard a great deal of talk about movement of fruit in this section, but taking the entire territory we find that very little fruit has actually gone to market. There still exists a general feeling of optimism regarding the fruit situation, and most growers have made up their minds to delay any shipments until they obtain a fair price for their fruit. We have an excellent crop of quality fruit up here and estimate that the fruit is 80 percent bright. Truck crops are looking very nice and we have about a normal acreage of pepper, eggplant, cabbage and other fall crops.

GUARD AGAINST INFLUENZA

Medical authorities predict a big flu epidemic this winter, Grapefruit juice is recognized as a preventative against this illness, so we recommend that you and your family drink plentiful quantites of this palatable juice this winter, urge your friends here and in the North to drink it. We believe it would be a fine idea if every firm in any way associated with the citrus industry used a slogan somewhat like the following on their stationery: "DRINK FLORIDA GRAPEFRUIT JUICE FOR HEALTH AND AS A SAFEGUARD AGAINST INFLUENZA."

POLK & HIGHLANDS COUNTIES
J. M. (Jim) Sample

Growers in these counties are going forward with their fall work with many growers plowing their grove property. Fall fertilization started about the 20th day of October and will continue through November and early December. Nitrogen is being used liberally at this time with the proper ratio of copper to build the trees up during the winter months. The summer and early fall rains, coming so heavily, necessitated heavier nitrogen replacement to offset the loss by leaching. Many growers who made no effort to control melanose on their fruit last spring have decided to apply control measures next spring.

HILLSBOROUGH & PINELLAS COUNTIES
C. S. (Charlie) Little

We notice that groves in this territory are showing a great deal of bronzing this fall and as a result grove owners are planning to make applications of some form of magnesium. In our fall fertilizer we are adding both quickly available magnesium and then more slowly available forms. There is a great deal of activity among the fruit buyers in this section but we are having trouble in getting out grapefruit to pass the maturity test.

Horticultural Hints

Many growers are delaying their fall cultivation and fertilizer application in an effort to get their fruit to pass maturity tests. There are several reasons why this practice is not entirely satisfactory. In the first place we must realize that there are other years to come when we will again expect large crops, and if the grove is neglected at this time it is certain that the following crop will not be up to expectations. Furthermore, by neglecting the grove at this time it is possible that the present crop might be damaged.

We have noticed heavy infestations of pumpkin bugs in some groves where the cover crop has not been cut. Remember that these bugs can do a great deal of damage. Your fall application of fertilizer is of a great deal of importance and should be applied at the earliest possible moment. Next spring's bloom and crop-set depend largely on this fall's fertilizer application.

Your trees will assimilate plant foods all during the fall and winter periods and next spring the trees will have sufficient vitality to set the large crop that you are expecting.

We recommend that you use plenty of nitrogen and copper this fall along with the other plant foods, and suggest that you have the LYONS FIELD MAN make an inspection of your grove and advise with him regarding the proper ratio of these materials to be applied on your individual property.

Scale insects are very active at this time and should be immediately brought under control before the hazards of winter set in, and make it practically impossible for you to use an oil spray. Rust mite are extremely active at this time and this is to remind you to keep a careful watch on this insect.

One of the most dependable methods of controlling melanose is to have your trees go into the spring season without any dead wood. Therefore we strongly urge that you remove all dead wood from the trees during the next few months. If this is done and and you follow with copper spray in early spring you are assured of melanose-free fruit.

ADVERTISEMENT — LYONS FERTILIZER COMPANY

S. W. BAIL, Prominent Citrus Grower, Says: . . .

"I have been using Lyons Fertilizers for the past eight or ten years EXCLUSIVELY and the results obtained have been so completely satisfying that I can imagine no reason why I should ever change to another brand.

"My 175 acre citrus grove located in the Hicora section speaks for itself much better than I can in telling how really effective Lyons Fertilizers are.. I do not believe you can find a finer grove anywhere — the crops which my trees have produced under the Lyons program far exceeds any previous records and the unusual percentage of No. 1 grade fruit tells volumes about my fertilizer program.

"I recommend to any grower having trouble with grove production to give Lyons Fertilizers a fair trial — my own experience indicates that these fertilizers will get results."

THE WELL DRAINED SOILS OF CENTRAL FLORIDA

(Continued from page 7)

against.

The Rex soils occur in the eastern part of Alachua county and in adjoining counties. They are used for the production of truck crops, of which lima beans is the most important.

The scrub land occupies ridges along old shore lines and is characterized by dune-like topography. This type of land supports a growth of scrub oaks, saw palmetto and sand pine. The soils of the scrub belong to the St. Lucie and Lakewood series. The St. Lucie soil has a very thin surface layer of light gray sand. This is underlain by white almost pure sand which extends downward without change to depths of several feet. The Lakewood soils differ from the St. Lucie soils in having a yellow subsurface layer which begins at depths of 12 to 24 inches. At one time the St. Lucie soils were used extensively for the production of pineapples but at present they are not used for crop production. The Lakewood soils are used inextensively for the production of citrus. Under present conditions neither of these soils should be farmed.

We have pointed out that there are many kinds of well drained soils in central Florida and have indicated that each has a particular set of charcteristics which determine its crop adaptations and dictate the management practices necessary for its most profitable use. There are many points which could not be covered in the short space allotted and, indeed, there are some points upon which no information exists at the present time.

We believe that the soil survey program soon to be initiated in Florida will aid materially in the development of accurate information on the distribution and fundamental characteristics of the various kinds of soils occurring in the state. With an accurate survey as a basis, the solution of future soil problems would be made easier and the application of knowledge already gained, facilitated.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912, AND MARCH 3, 1933, of THE CITRUS INDUSTRY, PUBLISHED MONTHLY AT BARTOW, FLORIDA, FOR OCTOBER, 1941.

COUNTY OF POLK,
STATE OF FLORIDA,

Before me, a notary public in and for the State and county aforesaid, personally appeared S. Lloyd Frisbie, who having been duly sworn according to law, deposes and says that he is the Business Manager of The Citrus Industry, and that the following is to the best of his knowledge and belief, a true statement of the ownership, management, (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, as amended by the Act of March, 1933, embodied in Section 537, Postal Laws and Regulations, printed on the reverse side of this form, to-wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are:
Publisher — Associated Publications Corp., Bartow, Fla
Editor — S. L. Frisbie, Tampa, Fla.
Business Manager — S. Lloyd Frisbie, Bartow, Fla.

2. That the owners are:
Associated Publications Corporation, Bartow, Florida.
S. L. Frisbie, Tampa, Fla.
S. Lloyd Frisbie, Bartow, Fla.
Loyal Frisbie, Bartow, Fla.
B. L. Gable, New York, N. Y.
F. L. Skelly, Orlando. Fla.
B. W. Skinner, Dunedin, Fla.
F. P. Wall, Mansfield, Ohio.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are:
American Fire & Casualty Co., Orlando, Fla.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

S. LLOYD FRISBIE,
Business Manager.

Sworn to and subscribed before me this 6th day of October, 1941.
(SEAL) H. M. STANFILL,
Notary Public.
(My commission expires 11-3-1942).

CLASSIFIED Advertisements

The rate for advertisements of this nature is only five cents per word for each insertion. You may count the number of words you have, multiply it by five, and you will have the cost of the advertisement for one insertion. Multiply this by the total number of insertions desired and you will have the total cost. This rate is so low that we cannot charge classified accounts, and would, therefore, appreciate a remittance with order. No advertisement accepted for less than 50 cents.

PLACE ORDER NOW Fall Delivery Citrus Trees. All Varieties. Paramount Grove Service, Box 843, Lakeland, Fla. 10-6t

PRODUCTION OF CITRUS FRUITS SHOWS VAST GAIN

(Continued from page 14)

are now closed to American fruits and while the war continues, fruit growers are hoping the volume of fruit consumed domestically will increase even more, especially among low-income groups, Mr. Guellow states in concluding his article.

Defense supplies of smokeless powder for big guns, anti-craft shells and Army rifles may be made from staple cotton instead of cotton linters, as a result of U. S. Department of Agriculture research.

Buy United States Savings Bonds and Stamps.

LAKE GARFIELD NURSERIES COMPANY
BARTOW, FLORIDA
ALL STANDARD VARIETIES CITRUS TREES—SPECIAL PRICES NOW IN EFFECT

WAIT — WAIT — WAIT — For the wonderful new highly improved varieties. Within a few months there will be two brand new types of early SEEDLESS oranges introduced — pays to wait and get the finest there is. These new oranges have 1½ up to 2 gallons more than the average early orange. Tests show 5½ to 6.14 gallons before October 15. Fruits of much higher soluble solids than any other early orange——11.75 solids and ratios 10.00 or up to 13 to one during early October. FLAVOR which makes premium prices is extraordinary. ROYAL PURPLE CITRUS RESEARCH NURSERY, Orlando.

SUPERIOR CITRUS TREES of principal varieties. Also Persian limes and avocado trees and new varieties of tangelos. None injured by cold. Ward's Nursery, Avon Park, Florida.

ALYCE CLOVER SEED. Ripe and cleaned. Ideal cover and hay crop. Write for information. P. E. Synder, Box 866, Lakeland, Fla.

LARGE AND SMALL orange groves for sale also acreage suited for citrus culture, dairying and general farming. Charlton & Associates, Valuation Engineers and Real Estate Appraisers, Ft. Lauderdale, Fla.

FOR SALE—Casurina Lephidophloia Florida's best windbreak trees $5.00 per 100 — $45.00 per 1000. S. F. Matthews, Homestead, Fla.

MACHINERY: Complete for 4 or 5 car capacity packinghouse, includes Coloring Room Eqiupment, Low Pressure Steam Boiler, Water Tank and Steel Tower. Sacrifice price for whole or part. Box 1987, Tampa.

Citrus Commission Director Endorses Orange Festival

Asking that the entire citrus industry work for the Florida Orange Festival, Granville Rutledge, advertising and sales promotion director of the Florida Citrus Commission has gone on record appealing for wholehearted support of the 18th annual citrus show which will be held in Winter Haven January 19-24, 1942.

Declaring that he believed the forthcoming Festival would be a "show window" to present Florida's citrus fruit to the nation, Mr. Rutledge issued a comprehensive statement of his observations on plans for the 1942 show and its advertising value to the industry. His statement follows, in full:

"The Florida Orange Festival, an established institution, operatng through the years for the benefit of the Florida citrus industry, offers a great opportunity for the education of Florida's citizens and visitors to the fact that there is in Florida a $500,000,000 industry that is all important to the health and well-being of our nation, I am sure the officials of the exposition will leave no stone unturned to make it the greatest show of its kind in the nation — a show second to none.

"I have been impressed by the sincereity of the officials of the Festival and with their plans to put the whole industry on parade.

"Florida citrus needs a 'Show Window' and I believe the Festival for 1942 will furnish just that. Taking the public through the intricate maze of citrus processing and canning and on to the point of sale merchandising effort, will show growers, shippers, canners and the general public just what is being done to put Florida citrus in a top position in the markets of the nation.

"John A. Snively, jr., president of the Festival association, an experienced citrus man, has working with him a group of veteran growers and processors and showmen who will work untiringly, I am sure, to build a great show.

"I believe that with the cooperation of the entire industry, backed by the honest and sincere efforts of the festival board, the 1942 show can be written down in history as the greatest ever. I do not mean to detract from the work of those who preceded Mr. Snively and his board of directors, but today there is a greater opportunity to show the public the whole citrus picture. Out in the markets of the nation we are striving to do a great job of advertising, sales promotion and merchandising — and here at home the folks who grow, pack and ship our citrus products should have inside and intimate knowledge of what is going on. The Festival will give us a great opportunity to make these revealations. I would like to ask that the whole industry work with the Festival — and we will all profit by building a great exposition of citrus."

Quadruple Value With...

BROGDEX

REDUCES DECAY
RETARDS SHRINKAGE

The Brogdex Process not only provides a

Better Wilt Control

but it also makes possible a

Better Polish

one that has longer life and

Improves Your Grade

gives you more number ones and more combination grade

Decay Control

reduces refrigeration costs

* *

Some other processes may give you one and some the other, but . . .

BROGDEX

GIVES YOU ALL FOUR

B. C. SKINNER, Distributor

THE BROGDEX SYSTEM

Coloring Room Process Color Added Process

DUNEDIN, FLORIDA

Armour Plant Foods Bring Balanced Meals To Citrus Growing In Your Fields-- These Armour "Imps" Just Have a Way Of Helping Make The Yields That Pay

To produce those bountiful, high-quality yields which enable you to make a better profit at market time, your trees need an adequate supply of energy from properly blended plant foods. The size and appearance, juice quality and inside texture of your fruit are affected by the soil ration your grove receives.

In Armour's BIG CROP Fertilizer you get this ration, from rich major and minor plant foods which are scientifically balanced to supply your trees with proper nourishment, in proportion to their needs. For season after season Armour's has helped lay a foundation for superior yields which bring higher profits to Florida growers.

Call Your Armour Representative Before Citrus Problems Arise

Your Armour representative has had extensive experience with the groves of this section. He can not only suggest an analysis suitable to your particular fruit, but can help solve the many problems involving grove cultivation. Call him before such problems arise: Let him help you plan your fertilizer applications, for better yields — lower growing costs—an increase in profits from **your** season's work.

ARMOUR FERTILIZER WORKS

Jacksonville, Florida